

UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS:	WILSON, THOMAS	ART UNIT:	2663
APPL. NO.:	09/874,662	EXAMINER:	NG, CHRISTINE
FILED:	JUNE 04, 2001	DOCKET NO.:	A-7160
TITLE:	SYSTEM AND METHOD FOR ALLOCATING PACKET IDENTIFIERS IN A TRANSPORT STREAM IN A SUBSCRIBER NETWORK		

August 7, 2006

AMENDMENT AND RESPONSE

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is in response to the Office Action mailed on April 7, 2006, the time for responding thereto being three months with a one-month extension so that a response is due on or before August 7, 2006. The following amendments and remarks are submitted in connection with the above-identified patent application. Reconsideration and reexamination of the application is respectfully requested at this time. Should it be determined that any excess fee has been received, the Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment to deposit account #19-0761.

Kindly amend the subject patent application as follows:

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of allocating PID values to a program in a digital transport stream, the digital transport stream including at least one program including of a plurality of elementary streams, the method comprising the steps of:

(a) determining from a map of session numbers an unassigned session number, wherein the map of session numbers is an array of elements, each element of the array is associated with a session number and has an unassigned state and an assigned state;

(b) assigning a session number to a session, wherein the session number is the determined unassigned session number, and wherein the session is associated with a program having a plurality of elementary streams;

(c) associating a PMT_PID value with the session number;

(d) assigning a set of PID values to the elementary streams of the program; and

(e) indicating in a map of allocable PID values the assigned PID values.

2. (Original) The method of claim 1, further including the step of:
associating the session number with an output port, wherein the program that is associated with the session is transmitted from the output port.

3. (Canceled)

4. (Canceled)

5. (Currently Amended) The method of claim 1 ~~claim-4~~, wherein the elements of the array are checked based upon their index values in the array, and the element having the lowest index value and an unassigned state is assigned to the session.

6. (Previously Presented) The method of claim 1, wherein the map of session numbers is a plurality of arrays, each array of the plurality of arrays is associated with an output port.

7. (Currently Amended) The method of claim 1, prior to the steps of (b), (c), (d), and (e) ~~(a), (b), (c) and (d)~~, further including the step of:

receiving a session message having a program identifier included therein, wherein the ~~in response to the session message~~ steps (b), (c), and (d) ~~(a), (b) and (e)~~ are implemented to assign a first session number to a first session that is associated with a first program identified by the program identifier, associate a first PMT_PID value to the first session number and assign a first set of PID values to the elementary streams of the first program; and after the steps of (b), (c), and (d) ~~(a), (b) and (e)~~, further including the step of:

transmitting from a device the elementary streams of the program in a digital transport stream.

8. (Original) The method of claim 7, wherein the device that transmits the program has a plurality of output ports that are adapted to transmit digital transport streams, and the session message further includes an output port identifier that identifies the output port of the plurality of output ports from which the elementary streams of the first program are transmitted.

9. (Original) The method of claim 8, wherein the first session is associated with the output port identified by the output port identifier.

10. (Currently Amended) The method of claim 9, further including the steps of:

receiving a second session message having a second output port identifier and a second program indicator included therein, wherein the second program indicator identifies a second program, wherein the second output port identifier identifies an output port, and wherein ~~in response to the second message the steps (a), (b) and (c)~~ the steps (b), (c), and (d) are implemented to assign a second session number to a second session that is associated with the second program, associate a second PMT_PID value to the second session number and assign a second set of PID values to the elementary streams of the second program; and

transmitting from the output port identified by the second session message the elementary streams of the second program.

11. (Original) The method of claim 10, wherein the output port associated with the first session is different from the second output port, the first and second session numbers are the same, and the first and second PMT_PID values are the same.

12. (Original) The method of claim 10, wherein the first program and the second program are the same program, and the first and second set of PID values assigned to the elementary streams of the program are the same.
13. (Original) The method of claim 10, wherein the output port associated with the first session is the same as the second output port, and the numerical values of the first and second PMT_PID values are related to the numerical values of the first and second session numbers.
14. (Original) The method of claim 1, further including the steps of:
allocating a first set of PID values for use as PMT_PIDs, wherein only PIDs from the first set of PID values are associated with PMT packets; and
allocating a second set of PID values for assignment to elementary streams of programs, wherein only PIDs from the second set of PID values are assigned to elementary streams of a program.
15. (Previously Presented) A method of allocating PID values to a program in a digital transport stream, the digital transport stream including at least one program including a plurality of elementary streams, the method comprising the steps of:
assigning a session number to a session, wherein the session is associated with a program having a plurality of elementary streams;
associating a PMT_PID value with the session number;
assigning a set of PID values to the elementary streams of the program;
indicating in a map of allocable PID values the assigned PID values;
receiving a session message having a program identifier included therein; and
determining the number of elementary streams of the identified program, wherein the number of PID values in the set of PID values assigned to the elementary streams of the program is less than or equal to the number of elementary streams of the identified program.

16. (Previously Presented) An apparatus in a digital network that includes a transport stream having a plurality of programs included therein, wherein a program is defined by a set of elementary streams, the apparatus comprising:

means for assigning a session number to a session, wherein a session is associated with a program of the transport stream;

means for assigning a PMT_PID to the session;

means for allocating a set of PIDs to a set of elementary streams of a program; and

a plurality of output ports, each output port of the plurality of output ports adapted to transmit a transport stream having at least one program, wherein each program transmitted from an output port is associated with a unique session number,

wherein a first output port of the plurality of output ports transmits a first transport stream,

which includes a first program having a first program number associated therewith, a

second output port of the plurality of output ports transmits a second transport stream,

which includes a second program having a second program number, which is

different than the first program number, associated therewith, the first and second

programs each having a PMT identified by a PMT_PID value associated therewith,

and the first and the second PMTs have the same PMT_PID value.

17. (Original) The apparatus of claim 16, wherein the value of the PMT_PID assigned to the session is related to the session number of the session.

18. (Original) The apparatus of claim 16, wherein the number of PIDs in the set of allocated PIDs is no more than the number of elementary streams of the program.

19. (Original) The apparatus of claim 16, wherein the set of allocated PIDs have values that are not contiguous.

20. (Canceled)

21. (Canceled)

22. (Previously Presented) The apparatus of claim 16, wherein the first and second programs are the same particular program, and the elementary streams of the particular program have the same PID values in the first and second transport stream.

23. (Canceled)

24. (Currently Amended) The apparatus of claim 23 16, wherein the first and second programs are the same particular program, and the elementary streams of the particular program have the same PID values in the first and second transport stream.

25. (Previously Presented) An apparatus in a digital network that includes a transport stream having a plurality of programs included therein, wherein a program is defined by a set of elementary streams, the apparatus comprising:

- means for assigning a session number to a session, wherein a session is associated with a program of the transport stream;

- means for assigning a PMT_PID to the session;

- means for allocating a set of PIDs to a set of elementary streams of a program;

- a first input port adapted to receive a session message having a program identifier and an output port identifier included therein, wherein the output port identifier identifies an output port of the plurality of output ports; and

- a second input port in communication with the plurality of output ports, the second input port adapted to receive a transport stream having a plurality of programs included therein, wherein the plurality of programs include a first program associated with the program identifier;

- wherein the means for assigning a session number uses the session message to assign a session number for a further session associated with the identified output port, thereby including the first program in the transport stream transmitted from the identified output port.

26. (Original) The apparatus of claim 16, wherein the means for assigning a session number includes a session number map.

27. (Original) The apparatus of claim 26, wherein the session number map is an array of elements having a first and second state, each element is associated with a session number, the first state representing an unassigned session number and the second state representing an assigned session number

28. (Original) The apparatus of claim 27, wherein the means for assigning a session number searches the array of elements for an element in the first state and assigns the session number associated with that element to the session, and changes the state of that element of the array to the second state.

29. (Original) The apparatus of claim 27, wherein each element of the array is associated with a PMT_PID.

30. (Original) The apparatus of claim 16, further including:
a plurality of output ports, each output port adapted to transmit a transport stream therefrom;
and
wherein the means for assigning session numbers includes a session number map, the session number map including a plurality of arrays, each array associated with an output port of the plurality of output ports.
31. (Original) The apparatus of claim 30, wherein each array of the plurality of arrays includes a plurality of elements and each element is associated with a PMT_PID value.
32. (Original) The apparatus of claim 16, wherein the means for allocating a set of PID values includes a PID allocation map.
33. (Original) The apparatus of claim 32, wherein the PID allocation map includes an array of elements associated with PID numbers.
34. (Original) The apparatus of claim 32, further including:
a plurality of output port, each output port of the plurality of output ports is adapted to transmit a transport stream having at least one program included therein; and
wherein the PID allocation map includes a plurality of arrays, each array of the plurality of arrays including a plurality of elements and each array is associated with an output port, each element of the plurality of elements is associated with PID numbers.
35. (Currently Amended) An apparatus in a digital network that includes a transport stream having a plurality of programs included therein, wherein a program is defined by a set of elementary streams, the apparatus comprising:
logic adapted to assign a session number from a session map, wherein the session number assigned to a session are one of an unassigned state and an assigned state to a session,
wherein ~~the~~ a session is associated with a program of the transport stream;
logic adapted to assign a PMT_PID to the session;
logic adapted to allocate a set of PIDs to a set of elementary streams of a program; and
an output port adapted to transmit a transport stream having at least one program, and wherein the logic for assigning the a session number ~~includes a map that also~~ associates the session number with the output port.

36. (Original) The apparatus of claim 35, wherein the value of the PMT_PID assigned to the session is related to the session number of the session.
37. (Canceled)
38. (Original) The apparatus of claim 35, wherein the logic for assigning a PMT_PID includes a map of PID values.

REMARKS

Claims 1, 2, 4-19, 22-36, and 38 are presently pending in the application. Claims 7, 10, and 23 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter in which Applicant regards as the invention. Claims 1 and 14 were rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent no. 6,219,358 ("Pinder"). Claims 2, 35, 36, and 38 were rejected under 35 U.S.C. 103(a) as being patentable of Pinder in view of U.S. Patent no. 6,775,257 ("Watanabe"). Claims 15-19, 22, and 25-34 are allowed. Claims 4-6, 8, 9, 11-13, and 24 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7 and 10 were amended to correctly claim the subject matter, and claim 23 has been canceled. Therefore, the 35 U.S.C. 112, second paragraph, rejection should be removed.

Independent claim 1 has been amended to include allowable, but objected to dependent claim 4. It is believed that independent claim 1 is now allowable over the cited art. Additionally, claims 7 and 10 were amended to correctly claim the subject matter. It is believed therefore that dependent claims 2 and 5-14 further limit independent claim 1 as amended and should also be allowable. Claim 4 has been canceled.

Independent claim 35 has been amended to more clearly define the present invention. It is believed that independent claim 35 as amended is now allowable over the cited art. Claims 36 and 38 further limit independent claim 35 and should also be allowable.

Reconsideration and reexamination of the present application is requested in view of the foregoing amendment and in view of the remarks.

CONCLUSION

The foregoing is submitted as a full and complete response to the Office Action dated April 7, 2006. Claims 1, 2, 5-19, 22, 24-36, and 38 will be pending in the present application upon entry of the present amendment, with claims 1, 16, and 35 being independent. Based on the amendments and remarks set forth herein, Applicant respectfully submits that the subject patent application is in condition for allowance. Because the claims may include additional elements that are not taught or suggested by the cited art, the preceding arguments in favor of patentability are advanced without prejudice to other bases of patentability.

Upon entry of the foregoing Response, the above-identified patent application includes 5 independent claims. Because Applicant has previously paid for 38 total claims and 5 independent claims, it is believed that no additional fee is due. Should it be determined that any excess fee has been received, the Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment to deposit account #19-0761.

Should the Examiner have any comments or suggestions that would place the subject patent application in better condition for allowance, he is respectfully requested to telephone the undersigned agent at the below-listed number.

Respectfully submitted:

SEND CORRESPONDENCE TO:

Scientific-Atlanta, Inc.
Intellectual Property Dept. MS 4.3.510
5030 Sugarloaf Parkway
Lawrenceville, GA 30044

By: 

WM. BROOK LAFFERTY
Attorney of Record
Reg. No. 39,259
Phone: (770) 236-2114
Fax No.: (770) 236-4806

August 7, 2006